WHAT IS CLAIMED IS:

1. A polarizing device useful for polarizing a piezoelectric material having two surfaces in high-temperature gas, the polarizing device comprising:

temperature-raising portion for raising the temperature of the piezoelectric material to a temperature required to polarize the piezoelectric material; and

a constant-temperature bath having an atmosphere of gas that is kept at the required temperature, the constant-temperature bath incorporating a polarizing portion for polarizing the piezoelectric material while the temperature of the piezoelectric material is kept at the required temperature.

2. A polarizing device according to Claim 1, wherein the constant-temperature bath further comprises an aging portion for performing an aging operation on the piezoelectric material that has been polarized by the polarizing portion.

3. A polarizing device according to Claim 1, wherein the temperature-raising portion is configured and arranged to heat both surfaces of the piezoelectric material.

4. A polarizing device according to Claim 3, wherein the temperature-raising portion includes radiating heating means for heating one of the surfaces of the piezoelectric material by radiation of heat.

5. A polarizing device according to Claim 3, wherein the temperature-raising portion includes means for directly heating one of the surfaces of the piezoelectric material.

6. A polarizing device according to Claim 1, further comprising:

a transport mechanism for transporting the piezoelectric material from the temperature-raising portion to the constant-temperature bath; and

a control portion that controls transportation of the transport mechanism.

7. A polarizing device according to Claim 6,

wherein the control portion controls a time selected from the group consisting of:

time for raising the temperature of the piezoelectric material by the temperature-raising portion;

time for setting the temperature of the piezoelectric material at a constant temperature inside the constant-temperature bath;

time for polarizing the piezoelectric material by the polarizing portion; and

time for performing an aging operation, wherein the constant-temperature bath further comprises an aging portion for performing an aging operation on the piezoelectric material that has been polarized by the polarizing portion; and

combinations thereof;

wherein the control portion controls in order to control the transportation of the transport mechanism based on the above time controlling operations.

8. A polarizing device according to Claim 7, wherein the control portion controls the time of each operation so as to be substantially the same.

9. A polarizing device according to Claim 6, further comprising a transport jig for receiving the piezoelectric material, the transport mechanism transporting the transport jig.

10. A polarizing device according to Claim 9,

wherein the transport jig comprises a pallet including a bottom wall, a piezoelectric material holdable recess, and a through hole in the bottom wall; and

the temperature-raising portion further comprising means for direct heating including a hot plate, the hot plate including heat transmitting protrusion and a heat transmitting contact surface, the heat transmitting protrusion being configured and arranged to be insertable into the through hole of the pallet and to be contactable through the through hole with a bottom surface of the piezoelectric material when accommodated in the recess, and the heat transmitting contact surface being contactable with a bottom surface of the pallet.

11. A method of polarizing a piezoelectric material inside high-temperature gas, the method comprising the steps of:

raising the temperature of the piezoelectric material to a temperature required to polarize the piezoelectric material; and

polarizing the piezoelectric material by placing the piezoelectric material into an atmosphere of gas the temperature of which is maintained at the required temperature.

12. A method of polarizing a piezoelectric material inside high-temperature gas according to Claim 11, further comprising the step:

of performing an aging operation on the polarized piezoelectric material in the same atmosphere of gas.

13. A polarizing device according to Claim 1, further comprising:

a piezoelectric material in the polarizing device.

14. A polarizing device according to Claim 5, wherein the means for direct heating comprises a hot plate, the hot plate including heat transmitting protrusions and a heat transmitting contact surface.